Guide for

Web Developers in California

May also be called: Back End Developers; Front End Developers; User Interface Developers; Web Applications Developers; Web Architects; and Web Designers

What Would I Do?

Web Developers are responsible for the technical aspects of website creation. They use software languages and tools to create applications for the Web. They identify the audience as well as determine the site's content and organization. They oversee production and implementation. They may integrate databases and other information systems into the websites. They may convert written, graphic, audio, and video components to compatible Web formats.

Web Developers build, customize, and manage Web content and develop Web applications using programming languages and databases. They write the code that the browser receives when a user types in a Web address or clicks on a link. They create the home page and lay out pages. They assign visual properties like fonts and colors to items for a visually appealing result. Web Developers write custom scripts to make Web pages more dynamic and easier to navigate. They use various browsers to check pages and forms to ensure cross-browser and platform compatibility.

They may focus on front-end or back-end development. Front end developers design the user interface and are responsible for visual design, user interaction, and browser compatibilities. Back end developers work with databases, servers, networks, and performance/scalability. In smaller companies, they may do it all or work the "full stack".

Tools and Technology

Web Developers use a variety of tools and technology in their work. In addition to computers, they use computer servers and high capacity removable media drives. They primarily use Web platform development software, such as HTML, CSS, and JavaScript. They may also use database management system, database user interface and query, development environment, enterprise application integration, graphics or photo imaging, object or component oriented development, and operating system software.

Important Tasks and Related Skills

Each task below is matched to a sample skill required to carry out that task.

Task	Skill Used in this Task
Design, build, or maintain websites, using authoring or scripting languages, content creation tools, management tools, and digital media.	Computers and Electronics

Perform or direct website updates.	Deductive Reasoning
Write, design, or edit Web page content, or direct others producing content.	English Language
Confer with management or development teams to prioritize needs, resolve conflicts, develop content criteria, or choose solutions.	Operations Analysis
Back up files from websites to local directories for instant recovery in case of problems.	Problem Sensitivity
Identify problems uncovered by testing or customer feedback, and correct problems or refer problems to appropriate personnel for correction.	Active Listening
Evaluate code to ensure that it is valid, is properly structured, meets industry standards and is compatible with browsers, devices, or operating systems.	Critical Thinking
Maintain understanding of current Web technologies or programming practices through continuing education, reading, or participation in professional conferences, workshops, or groups.	Programming

Source: U.S. Department of Labor Occupational Information Network (O*NET) at online.onetcenter.org.

Working Conditions

Web Developers usually work in offices or laboratories in comfortable surroundings. They work about 40 hours a week, but may be required to work some evenings or weekends to meet deadlines or solve specific problems. In addition, they may need to be available on an on-call basis and also may have the option of working flexible hours. This type of work may be stressful for some. They may experience eyestrain, back discomfort, and hand and wrist problems from using a computer for long periods of time. Telecommuting is becoming more common allowing Web Developers to do even more work from remote locations, reducing or eliminating the need to travel to the customer's workplace.

Large numbers of Web Developers work on a temporary or contract basis. A number of workers are needed to get a new website up and running; fewer may be required once it is established.

Although most Web Developers are not represented by unions, unionization varies by industry. Those working in the public sector may join the Service Employees International Union.

Will This Job Fit Me?

The job of Web Developers may appeal to those who enjoy activities that involve following set procedures and routines. This occupation involves working with data and details more than with ideas. Individuals who like to work on their own and make decisions should enjoy this occupation.

Web Developers need problem solving and analytical skills as well as the ability to handle multiple projects and choose the right technology for the job. Effective communications skills are also important as Web Developers consult with customers, programmers, managers, and other staff members. They frequently work in teams, but may also work independently. Because of the nature of the work, they also need creativity, flexibility, good attention to detail, and the ability to stay current on the changing standards and tools used in Web development.

What Wages and Benefits Can I Expect?

Wages

Web Developers is a new occupation and there is no average wage information available. However, wages are available for the larger occupational cluster of Information Security Analysts, Web Developers, and Computer Network Architects. The median wage in 2011 for Information Security Analysts, Web Developers, and Computer Network Architects in California was $84,362 annually, or $40.56 hourly. The median is the point at which half of the workers earn more and half earn less.

Annual Wages for 2011	Low (25th percentile)	Median (50th percentile)	High (75th percentile)
California	$65,479	$84,362	$110,535

Source: EDD/LMID Occupational Employment Statistics Survey, 2011 Wages do not reflect self-employment. Wages displayed are for Information Security Analysts, Web Developers, and Computer Network Architects.

Benefits

Most Web Developers receive medical and dental insurance, as well as vacation, sick leave, and retirement plans from their employers. Self-employed or independent contractors must provide for their own insurance and other benefits.

What is the Job Outlook?

There will be a strong demand for Web Developers in California. As the amount of data sent over the Internet increases, more Web Developers will be needed. In addition, the growing number of Internet users and expansion of Internet services, such as e-commerce, will also drive the demand.

Projections of Employment

In California, the number of Information Security Analysts, Web Developers, and Computer Network Architects is expected to grow much faster than the average growth rate for all occupations. Jobs for Information Security Analysts, Web Developers, and Computer Network Architects are expected to increase by 50.3 percent, or 17,600 jobs between 2008 and 2018.

Estimated Employment and Projected Growth Information Security Analysts, Web Developers, and Computer Network Architects					
Geographic Area (Estimated Year-Projected Year)	Estimated Employment	Projected Employment	Numeric Change	Percent Change	Additional Openings Due to Net Replacements
California (2008-2018)	35,000	52,600	17,600	50.3	6,300

Source: EDD/LMID Projections of Employment by Occupation at www.labormarketinfo.edd.ca.gov/?PageID=1011

Annual Job Openings

In California, an average of 1,760 new job openings per year is expected for Information Security Analysts, Web Developers, and Computer Network Architects, plus an additional 630 job openings due to net replacement needs, resulting in a total of 2,390 job openings.

Estimated Average Annual Job Openings Information Security Analysts, Web Developers, and Computer Network Architects			
Geographic Area (Estimated Year-	Jobs From Growth	Jobs Due to Net Replacements	Total Annual Job

Projected Year)			Openings
California (2008-2018)	1,760	630	2,390

Source: EDD/LMID Projections of Employment by Occupation at
www.labormarketinfo.edd.ca.gov/?PageID=1011

How Do I Qualify?

Education, Training, and Other Requirements

The level of education and type of training required vary by employer. A bachelor's degree in a computer-related field is required for most jobs; however, some employers may accept related experience and certification. Relevant work experience is very important in this occupation, particularly in working with various scripting languages. Knowledge of Web standards, usability, and best practices is important.

Early Career Planning

High school students interested in this kind of work should take classes in mathematics, computer science, information technology, and language arts. Other helpful classes may include business, physical science, and art. Training programs are also available through Regional Occupational Programs (ROP) in Web design, Web page design, and website development. To find an ROP program near you, go to the California Association of Regional Occupational Centers and Programs website at www.carocp.org/carocps.html.

Continuing Education

Web Developers need to stay current on emerging Web technologies and keep their skills up to date. Employers, software vendors, colleges and universities, and private training institutions offer continuing education. Attending professional seminars can also enhance skills and advancement opportunities.

Licensing and Certification

Professional certification has become the industry standard and can demonstrate competence in a particular field. Certification programs are available through product vendors, computer associations, and other training institutions. Many product vendors require those who work with their products to be certified. For more information, go to the U.S. Department of Labor's Career InfoNet website at www.acinet.org and scroll down to "Career Tools." Click on "Certification Finder" at www.acinet.org/certifications_new/default.aspx and follow the instructions to locate certification programs.

Where Can I Find Training?

There are two ways to search for training information at www.labormarketinfo.edd.ca.gov/?Pageid=1013:

- Search by Field of Study to find what programs are available and what schools offer those programs. You may use keywords such as: Internet and Web.
- Search by Training Provider to find schools by name, type of school, or location.

Contact the schools you are interested in to learn about the classes available, tuition and fees, and any prerequisite course work.

Where Would I Work?

Web Developers work in a variety of industries. However, since it is a new occupational title, the largest industries employing the cluster of Information Security Analysts, Web Developers, and Computer Network Architects, are as follows:

Industry Title
Computer Systems Design and Rel Services
Management & Technical Consulting Svc
Management of Companies and Enterprise
Other Information Services
Local Government

Source: EDD/LMID Staffing Patterns

Finding a Job

Networking is important in this occupation, since many Web Developers find work through referrals. Jobs can also be found through direct application to employers, newspaper classified advertisements, online job boards, and professional organizations. **Online job opening systems** include JobCentral at www.jobcentral.com and CalJOBS^{SM} at www.caljobs.ca.gov.

To find your nearest One-Stop Career Center, go to Service Locator at www.servicelocator.org. View the helpful job search tips at www.labormarketinfo.edd.ca.gov/occguides/JobSearchTips.pdf for more resources (requires Adobe Reader).

Yellow Page Headings

You can focus your local job search by checking employers listed online or in your local telephone directory. Below are some suggested headings where you might find employers of Web Developers.

- City Government
- Computer System Designers & Consultants
- County Government
- Internet Access Providers Wireless
- Internet Service Providers (ISP)
- Management Consultants
- Network Design & Systems
- Web Site Design & Services

Find Possible Employers

To locate a list of employers in your area, use "Find Employers" on the LaborMarketInfo website at www.labormarketinfo.edd.ca.gov/aspdotnet/databrowsing/empMain.aspx?menuChoice=emp.

- Select the search for employers by occupation.
- Select a geographic area.
- Search for an occupation by keyword, occupation, or category.
- Select one of the top industries that employ the occupation.
- This will give you a list of employers in that industry in your area.
- Click on "View Filter Selections" to limit your list to specific cities or employer size.
- Click on an employer for the street address, telephone number, size of business, website, etc.
- Contact the employer for possible employment.

Where Could This Job Lead?

Some Web Developers may advance to managerial or project leadership positions. Others with significant expertise in a specific area may find opportunities as an independent consultant.

Related Occupations

Below is a list of occupations related to Web Developers.

- Computer Network Architects (SOC 15-1143)
- Computer Programmers (SOC 15-1131)
- Computer Science Teachers, Postsecondary (SOC 25-1021)
- Computer Systems Analysts (SOC 15-1121)
- Computer User Support Specialists (SOC 15-1151)
- Database Administrators (SOC 15-1141)
- Information Security Analysts (SOC 15-1122)
- Network and Computer Systems Administrators (SOC 15-1142)

Other Sources

- Association for Computing Machinery (ACM)
  www.acm.org
- Association for Web Professionals
  www.webprofessionals.org
- Computing Technology Industry Association
  www.comptia.org
- Institute for the Certification of Computing Professionals (ICCP)
  www.iccp.org
- Institute of Electrical and Electronics Engineers (IEEE) Computer Society
  www.computer.org
- National Workforce Center for Emerging Technologies
  www.nwcet.org
- Web Developer Degrees
  www.webdeveloperdegrees.org
- Web Professional Jobs
  webprofessional.jobs

These links are provided for your convenience and do not constitute an endorsement by EDD.

For the Career Professional

The following codes are provided to assist counselors, job placement workers, or other career professionals.

System	Code
SOC – Standard Occupational Classification at www.bls.gov/soc	15-1134
O*NET – Occupational Information Network at online.onetcenter.org	
Web Developers	15-1134
Interest Codes (RIASEC) at online.onetcenter.org/find/descriptor/ browse/Interests/#cur	CIR

The California Occupational Guides are a product of:
The California Employment Development Department
Labor Market Information Division
www.labormarketinfo.edd.ca.gov

Published: April 12, 2012